

299-W19-49 (C4695) Log Data Report

Borehole Information:

Borehole: 299-W19-49 (C4695)		Site: 200 West Area, between U Plant and U8 Crib			
Coordinates (WA St Plane)		GWL¹ (ft): 257.15	GWL Date: 9/7/05		
North Not available	East Not available	Drill Date 09/05	Ground Level Elevation Not available	Total Depth (ft) 380	Type Becker

Casing Information:

Casing Type	Stickup (ft)	Outer Diameter (in.)	Inside Diameter (in.)	Thickness (in.)	Top (ft)	Bottom (ft)
Steel	2.7	6.24	6.0	0.12	2.7	381
Steel	2.25	9.0	8.0	0.50	2.25	381

Borehole Notes:

The Becker drilling system uses a dual-wall casing. Air is forced down the annulus and cuttings are returned inside the inner casing. Total wall thickness is 0.620 in., increasing to 1.115 in. at the casing joints that occur at 10-ft intervals. The casing dimensions are derived from published values for Becker drill casing. Logging data acquisition is referenced to the ground surface. There is a large gravel pad around the borehole to support the drilling activities.

Logging Equipment Information:

Logging System: Gamma 1E	Type: SGLS (70%) SN: 34TP40587A
Effective Calibration Date: 03/04/05	Calibration Reference: DOE/EM-GJ864-2005
Logging Procedure: MAC-HGLP 1.6.5, Rev. 0	

Spectral Gamma Logging System (SGLS) Log Run Information:

Log Run	1	2 Repeat			
Date	09/07/05	09/08/05			
Logging Engineer	Spatz	Spatz			
Start Depth (ft)	380.0'	50.0'			
Finish Depth (ft)	0.0'	10.0'			
Count Time (sec)	50	50			
Live/Real	R	R			
Shield (Y/N)	N	N			
Sample interval (ft)	1.0 ft	1.0 ft			
ft/min	NA	NA			

Log Run	1	2 Repeat			
Pre-Verification	AE107CAB	AE108CAB			
Start File	AE107000	AE108000			
Finish File	AE107380	AE108040			
Post-Verification	AE107CAA	AE108CAA			
Depth Return Error (in.)	Low 4.0	0.0			
Comments	No fine-gain adjustment made.	Repeat section.			

Logging Operation Notes:

Pre- and post-survey verification measurements were acquired in the Amersham verifier, SN 118.

A centralizer was installed on the sonde during logging.

Maximum borehole depth logged was 380.0 ft, before sonde un-weighted.

Analysis Notes:

Analyst:	Pope	Date:	07/13/06	Reference:	GJO-HGLP 1.6.3, Rev. 0
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Pre-run and post-run verifications for the logging system were performed before and after data acquisition. Acceptance criteria were met for all verification spectra.

Casing thickness (additive for the 6- and 9-in. casings) is approximately 0.620 in. The combined thickness at casing joints is 1.115 in. This thickness results in a significant reduction in gamma activity detection as the detector passes by a casing joint. However, it is not practical to correct individual data points for the effect of casing joints. The influence of the thick joints is apparent on the total gamma plot, where reduced count rates are exhibited at approximately 10-ft depth intervals.

SGLS spectra were processed in batch mode using APTEC SUPERVISOR to extract the total gamma count rate from individual files. No corrections are made for dead time, casing, or water.

Log Plot Notes:

Log plots are provided for the total gamma and dead time. A repeat log section is also presented.

Results and Interpretations:

A decrease in gamma activity occurs at each casing joint, where the increase in wall thickness results in greater attenuation of gamma activity. No anomalous gamma activity was observed. This observation suggests no significant concentrations of man-made radionuclides. There is a decrease in total gamma activity between about 184 and 197 ft and an increase in total gamma activity at about 180 ft, which may be coincident with caliche in the lower Hanford Formation.

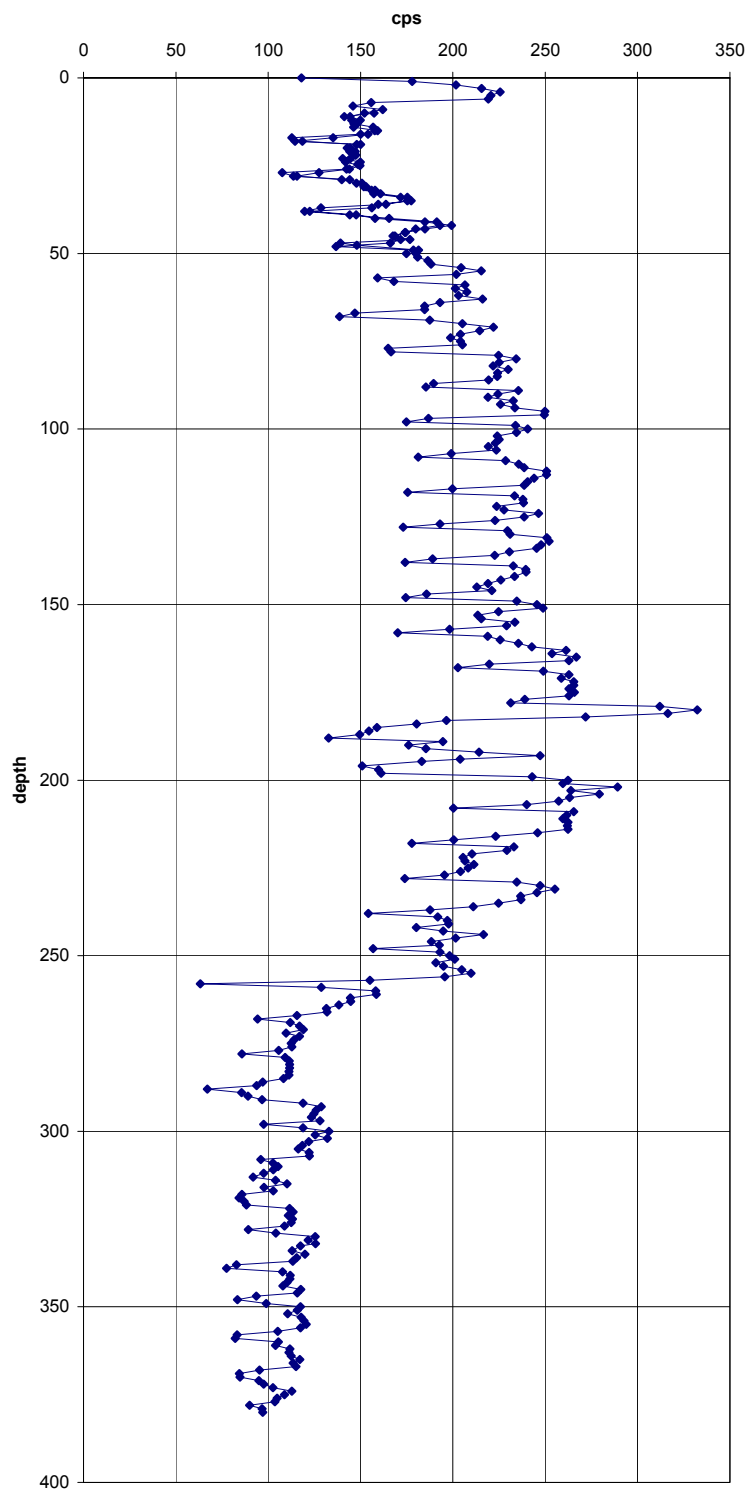
The repeat section indicated good agreement of the total count rate.

¹ GWL – groundwater level

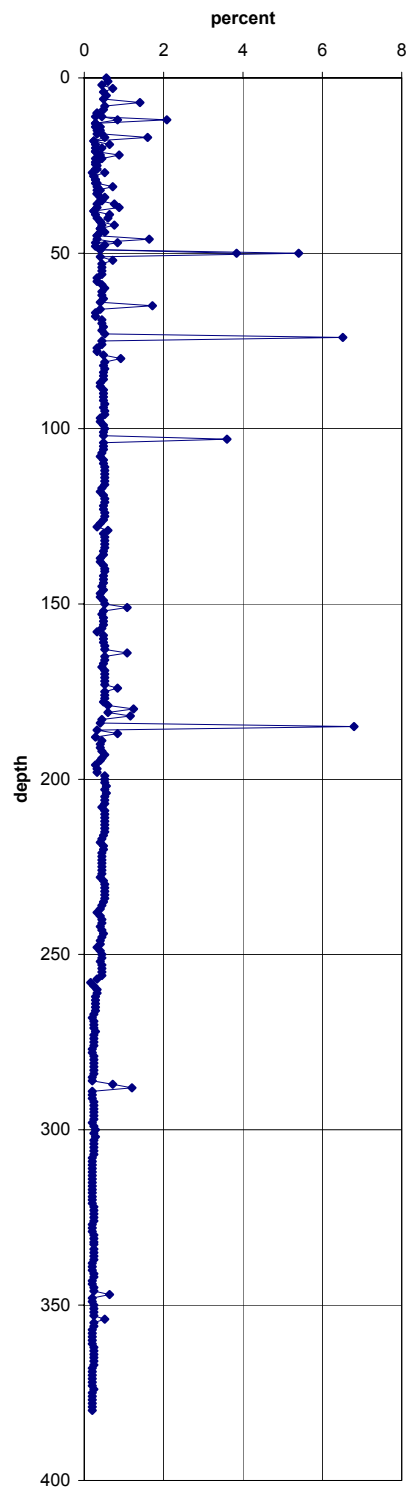
² N/A – not applicable

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Total Gamma



Dead Time



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Repeat Section

